

WATER BASIS OF DESIGN REPORT FOR PIMA MCDOWELL SHOWROOM

Scottsdale, Arizona

23 July 2021

PREPARED FOR

Aline Architecture Concepts
7340 East Main Street, #210
Scottsdale, Arizona 85251

DEVELOPER

Tom Frenkel
7340 East Main Street, #200
Scottsdale, Arizona 85251

SITE ADDRESS

8705 East McDowell Road
Scottsdale, Arizona 85257

PREPARED BY



4450 north 12th street, #228
phoenix, arizona 85014
CYPRESS # 21.120



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INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Pima McDowell Showroom' and is located at 8705 East McDowell Road in Scottsdale, Arizona. The proposed project consists of the renovation of the existing onsite buildings and addition of a new warehouse and storage yard.

The utility provider for water facilities is the City of Scottsdale.

EXISTING CONDITIONS

Per available utility maps and as-built records, an existing 12" ACP water main is located in the Pima Road right-of-way east of the Project. The existing building is 15,000 sf and is connected to the said main for domestic service via a 2" meter. Refer to Appendix A for City of Scottsdale Water Quarter Section Map.

FIRE FLOW REQUIREMENTS

The total building area after the redevelopment will be 39,000 square feet. The building is type conservatively estimated to be VB construction. Per the International Fire Code, Table B105.1, the existing building with the new expansion requires a minimum fire flow of 5,500 GPM for a 4-hour duration. The redeveloped building will have automatic sprinklers installed resulting in an allowable 50% reduction in fire flow requirements. Required fire flow will be 2,750 GPM for a 2-hour duration. A flow test was completed on July 15th, 2021 on the existing onsite fire hydrant immediately northeast of the existing showroom building. 5,128 GPM is available at the existing fire hydrant after accounting for City of Scottsdale required PSI and Safety Factor adjustments. Refer to Appendix B for Fire Flow Results.

PROPOSED CONDITIONS

The existing 15,000 SF building is intended to be redeveloped by the new user as showroom with the addition of a new 20,000 SF warehouse and 4,000 SF storage yard. The design team intends to retain and reuse the existing 2" water service connection east of the redeveloped building. This is anticipated to provide adequate sizing and pressure to supply the intended domestic service to the building. Refer to Appendix C for Preliminary Floor Plan.

REQUIRED COMPUTATIONS

EXISTING WATER DEMAND:

Average Day Demand (Commercial/Retail): $0.00111/\text{SF} \times 15,000 \text{ SF} = 16.65 \text{ GPM}$

Peak Hour Demand: $3.5 \times 16.65 = 58.28 \text{ GPM}$

Maximum Day Demand + Fire Flow Demand: $2 \times (16.65 \text{ GPM}) + 2,750 \text{ GPM} = 2,783.3 \text{ GPM}$

PROPOSED WATER DEMAND:

Average Day Demand (Commercial/Retail): $0.00111/\text{SF} \times 39,000 \text{ SF} = 43.29 \text{ GPM}$

Peak Hour Demand: $3.5 \times 43.29 = 151.52 \text{ GPM}$

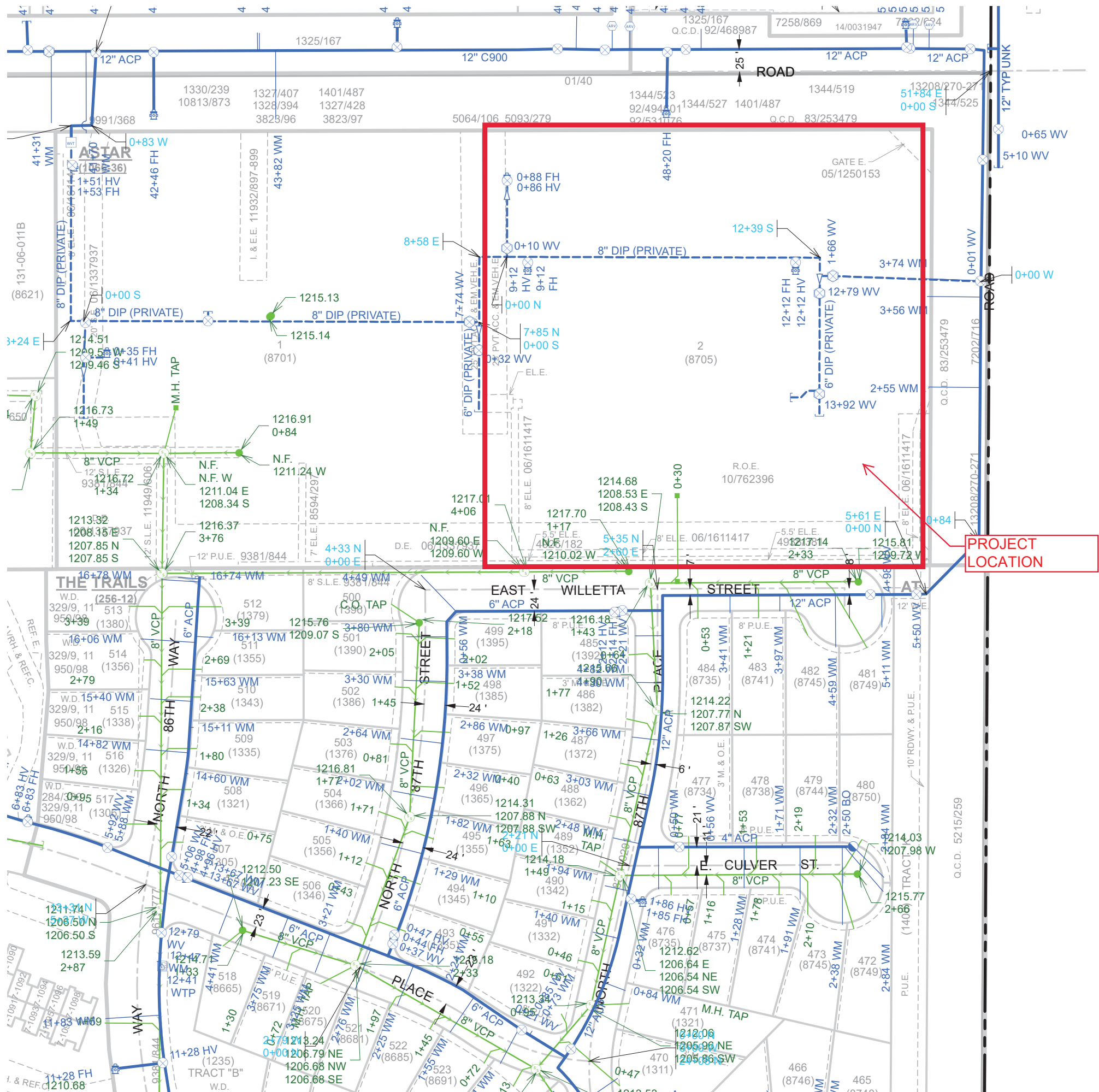
Maximum Day Demand + Fire Flow Demand: $2 \times (43.29 \text{ GPM}) + 2,750 \text{ GPM} = 2,836.58 \text{ GPM}$

Per the City of Scottsdale Design Standards & Policies Manual, Section 6-1.416 –M, minimum meter size is 1-1/2". The existing 2" water service from the east will be sufficient to support the minimum meter requirement.

CONCLUSION

CYPRESS respectfully submits this report as the Water Design Report for the proposed Pima McDowell Showroom Development. The proposed water system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
City of Scottsdale Water and Sewer Map



GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

- | | |
|-------------------------------------|--|
| Water Valve | |
| Non-potable Water Valve | |
| Fire Hydrant | |
| Water Blowoff | |
| Water Main Reducer | |
| Water Sample Station | |
| Water Air Release Valve | |
| Non-potable Water Air Release Valve | |
| Water Pressure Reducing Valve | |
| Water Vault | |
| Water Manhole | |
| Non-Potable Water Manhole | |
| Water Pump | |
| Water Main | |
| Non-Potable Water Main | |
| Fire Line | |
| Water Service | |
| Non-Scottsdale Water Main | |
| Sewer Manhole | |
| Sewer Cleanout | |
| Sewer Lift Station | |
| Sewer Treatment Plant | |
| Sewer Main - Gravity | |
| Sewer Main - Force | |
| Non-Scottsdale Sewer Main | |
| Sewer Service | |

Appendix B

Fire Flow Test Results

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	Pima and McDowell
Project Address:	8705 East McDowell Road, Scottsdale, Arizona, 85257
Client Project No.:	Not Provided
Arizona Flow Testing Project No.:	21381
Flow Test Permit No.:	C65833
Date and time flow test conducted:	July 15, 2021 at 7:20 AM
Data is current and reliable until:	January 15, 2022
Conducted by:	Floyd Vaughan– Arizona Flow Testing, LLC (480-250-8154)
Coordinated by:	Ray Padilla –City of Scottsdale-Inspector (602-541-0586)

Raw Test Data

Static Pressure: **88.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **78.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **24.0 PSI**
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Pollard Diffuser
(Measured in inches)

Coefficient of Diffuser 0.9

Flowing GPM: **2,105 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **5,927 GPM**

Data with 16 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **62.0 PSI**
(Measured in pounds per square inch)

Distance between hydrants: Approx.: 850-Feet

Main size: Not Provided

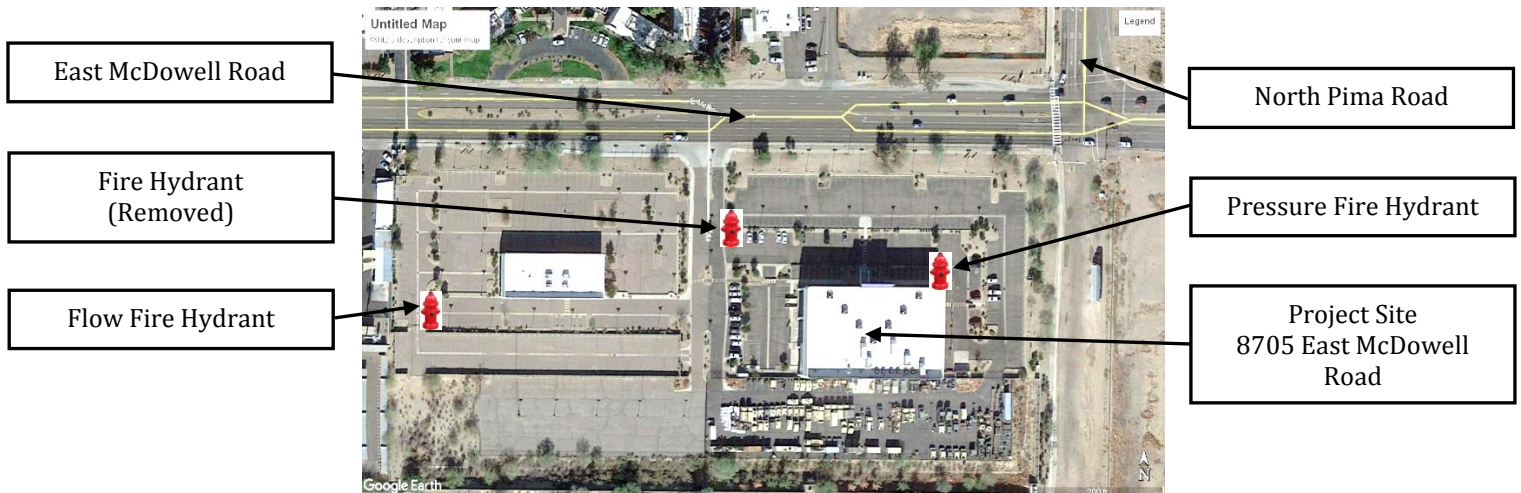
Flowing GPM: **2,105 GPM**

GPM @ 20 PSI: **5,128 GPM**

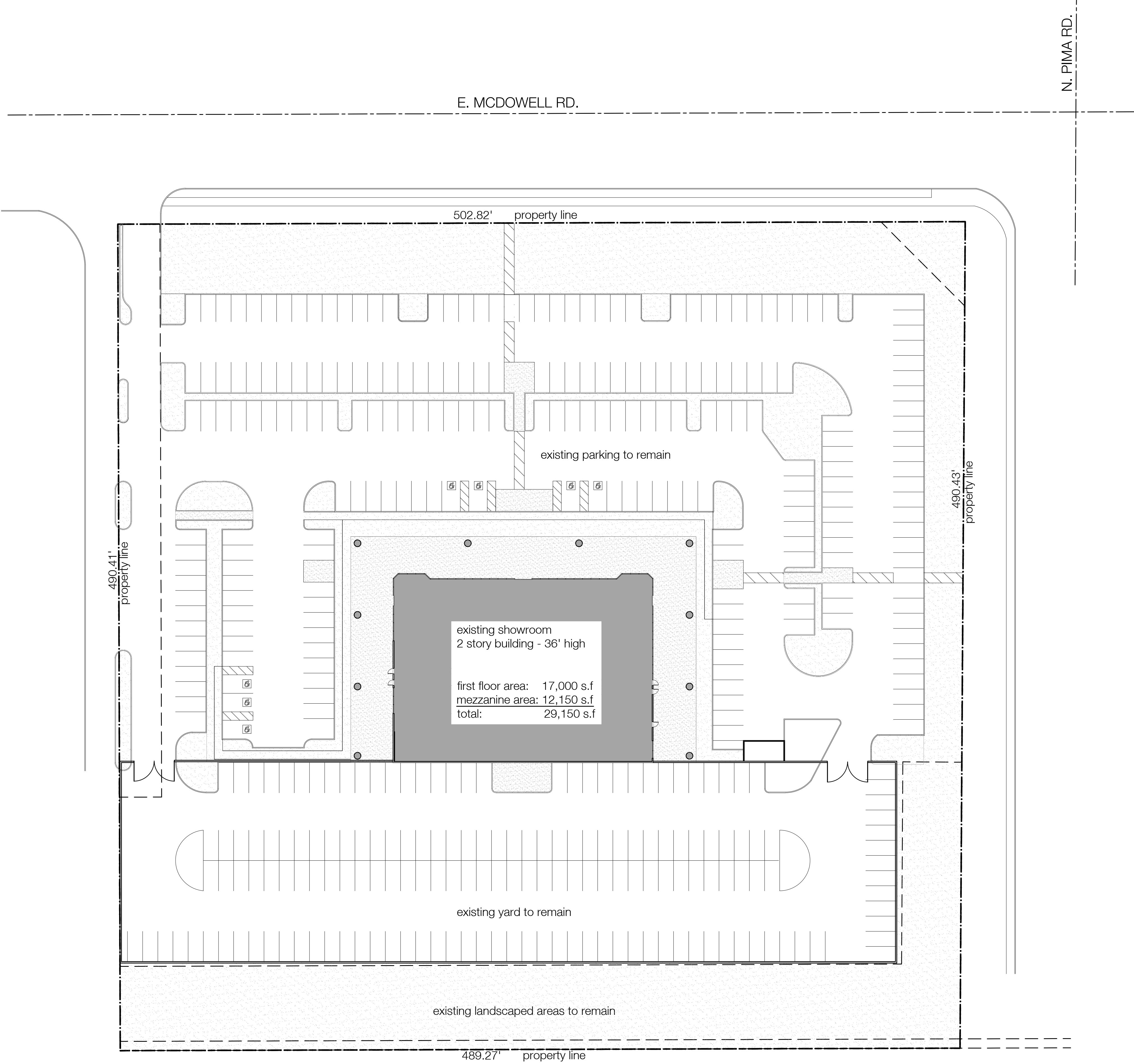
Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

Flow Test Location

North ↑

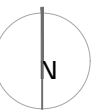


Appendix C
Preliminary Site Plan



SITE PLAN

1/32" = 1'-0"



APPLICABLE CODES

2015 international building code
2015 international mechanical code
2015 international fire code
2015 international energy conservation code
2015 international green construction code
2014 national electric code
2015 international plumbing code
2015 international existing building code
2009 international code council / american national standards
institute a117.1 accessibility code
2010 americans with disabilities act acessibility guidelines

PROJECT SUMMARY

proposal is for the change of zoning from C-4 to C-3. the site is not subject to change.

LEGAL DESCRIPTION

recorded in book 872 of maps, page 31. being a portion of the northeast quarter of section 1, township 1 north, range 4 east of the gila & salt river meridian, maricopa county, arizona.

SITE DATA

apn 131-07-561
site area (net) 245,471 s.f. or 5.63 acres
site area (gross) 314,456 s.f. or 7.22 acres
existing zoning C-4
proposed zoning C-3
FAR allowed: 0.8 actual FAR = 29,150 s.f. / 245,471 s.f. = 0.12

BUILDING DATA

first floor area 17,000 s.f.
mezzanine area 12,150 s.f.
building area total 29,150 s.f.
occupancy type B (business)
construction type II-B (sprinklered)
maximum height 75'-0"

GENERAL LIMITATIONS

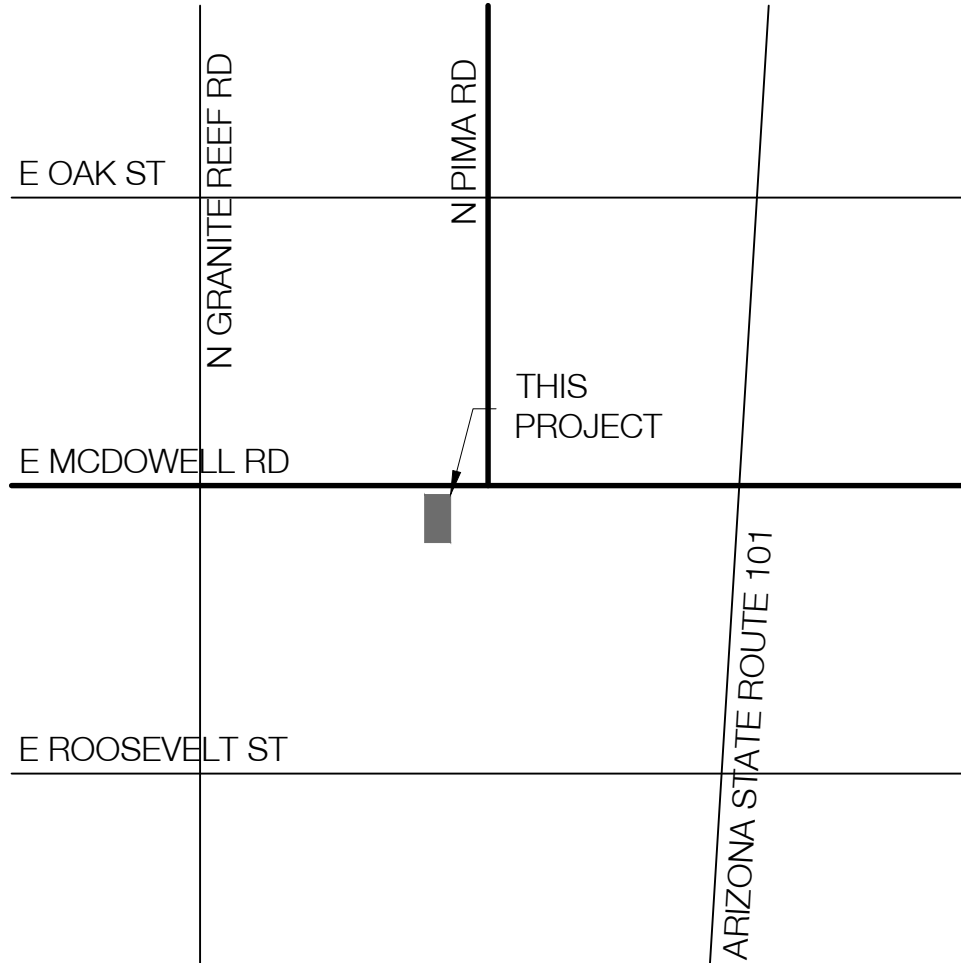
construction type II-B (sprinklered)
allowable area 69,000 sq. ft.
building total area 29,150 sq. ft.
allowable height 75'-0" (4 stories)
actual height 36'-0" (2 stories)

PARKING CALCULATIONS

vehicle parking
required (medical office) 29,150 s.f. / 250 = 117
accessible (101-150 spaces-4%) = 5
117 spaces total (5 accessible)
provided 192 (7 accessible)

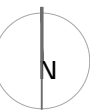
OPEN SPACE CALCULATIONS

max. building height = 36'-0" (36'-0" allowed)
first 12' of height = 10% x net lot area
= .10 x 245,471 = 24,547.1 s.f.
next 24' of height = 24' X .004 X 245,471 = 23,565 s.f.
open space required (not including parking lot landscaping)
24,547+23,565 = 48,112 s.f.
open space provided = 57,361 s.f.
open space distribution - frontage: 0.5 x 57,361 s.f. = 28,680 s.f.
open space provided in frontage = 28,866 s.f.
parking lot landscaping required
parking lot area x 15%
94,775 s.f. x .15 = 14,187 s.f.
parking lot landscaping provided = 21,006 s.f.



VICINITY MAP

NTS



REZONING APPLICATION
planning no.: 582-PA-2021

PIMA MCDOWELL
8705 e. mcdowell rd.
scottsdale, arizona 85257

7340 EAST MAIN STREET #210
SCOTTSDALE, ARIZONA 85251
MADE WITH ALINE . COM

ALINE
ARCHITECTURE CONCEPTS

SITE PLAN

A-1.0

revisions

preliminary not for construction

date issued: august 13, 2021
project # 21033